



# NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

## **Field Validation of Collaborative Capacity Audit**

**4 February 2008**

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# Abstract

This phase of our study further develops and refines a collaboration capacity survey that was designed by the authors in 2003. Using verbal protocols with subject-matter experts in the DoD acquisition arena, field-testing, and a literature review, the researchers piloted alternative forms of the diagnostic survey. The result was a refined set of interview questions and a survey containing items that assess collaborative capacity, individual demographics, and organizational demographics. Our research journey has thus brought us to the point of operationalizing our conceptual model of collaborative capacity. We believe this diagnostic survey holds promise both for both practice and theory.

**Keywords:** inter-agency collaboration, inter-organizational collaboration, collaborative capacity.

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# I. Background and Overview

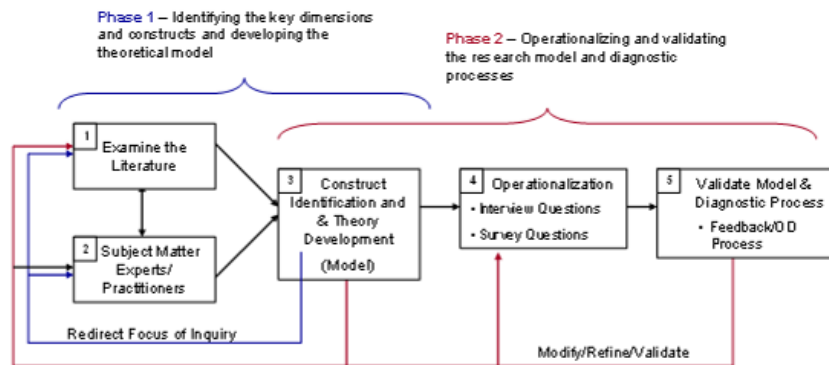
In the summer of 2002, our research team began a journey of understanding “collaborative capacity.” We define “collaborative capacity” as *the ability of organizations to enter into, develop, and sustain inter-organizational systems in pursuit of collective outcomes*. Last year, we developed a diagnostic tool to measure collaborative capacity and constructed diagnostic methods and techniques to enhance and facilitate its developmental process.

This year, our research focused on administering our instrument to samples of relevant Subject-matter experts (SMEs) seeking field validation. Continuing our systematic study of collaborative capacity, this 2007 technical report documents four aspects of our research program:

- a. progress of our four-year research program on inter-agency collaboration,
- b. application of collaborative capacity to DoD acquisition,
- c. refinement of our collaborative capacity survey instrument, and
- d. documentation of two empirical studies using the refined collaborative capacity diagnostic survey.

## A. The Collaborative Capacity Research Process

Figure 1 presents a map of the research process that the authors have been pursuing in our study of inter-organizational collaborative capacity.



**Figure 1. Research Process for Collaborative Capacity**

Our initial research focus was the interagency context of Homeland Security (HLS). In the last five years, we have extended our investigations into the context of Department of Defense (DoD) Acquisitions. By taking advantage of what we learned about the general problem of collaboration in the relatively “young,” startup context of HLS, we have been able to more rapidly generate a diagnostic instrument suitable for the organizational development (OD) efforts in the more mature and institutionalized context of DoD Acquisitions. We also hope to better understand aspects of developmental dynamics by focusing on these two different security and defense contexts.

## B. Phase 1: Construct Identification and Theoretical Development

Phase 1 of the project began in 2002/2003 and focused on developing a theoretical model. It aimed at identifying the key constructs of collaborative capacity with respect to inter-organizational *planning*.<sup>1</sup> As Figure 1 illustrates, our investigations began by (Step 1 above) examining the scholarly and applied literatures to learn as much as we could about what was known about collaboration

<sup>1</sup> We specially chose to focus on the early stages of planning rather than the later stage—response. The literature shows that a gap exists for collaboration in the planning stages.

in general and its application in the context of homeland defense and homeland security, in particular.

We found that the relevant literature on collaboration is vast and diverse—partly because collaboration is a multi-level construct relevant to public and private sectors. The literatures on teams and intra-organizational collaboration are especially large. Our research focus, while mindful of the extant literature, concentrated primarily on public or public-private partnerships at the inter-organizational or interagency level of analysis. Our initial research (Hocevar, Jansen & Thomas, 2004) included an examination of such pertinent constructs as: absorptive capacity, organizational interdependence, boundary spanners, transorganizational development, social networks, culture, and knowledge management. We also examined relevant government reports (e.g., US GAO, 2002). We were especially focused on what specific patterns of action were likely to contribute to success or generate barriers to collaboration.

We also turned to (see Step 2 of Figure 1) subject-matter experts (SMEs) in NPS's Center for Homeland Defense and Security (CHDS) early in the research process. First, we worked with colleagues in NPS's graduate programs in Homeland Security. Then, we turned to work with HLS professionals who were enrolled in the program. Our general approach was to use a force-field analysis to draw on the wealth of experiences represented in the CHDS master's degree community. Students were asked for critical incidents that had either blocked or facilitated collaborative capacity in the context of their work experiences. These data were content-analyzed to inductively determine the frequency with which various themes emerged. These results (shown in Table 1) highlight facilitators and inhibitors of collaborative capacity.

**Table 1. Factors Affecting Inter-organizational Collaboration**

Organization Design Component	"Success" factors	"Barrier" factors
Purpose & strategy	<ul style="list-style-type: none"> <li>- <b>"Felt need" to collaborate</b></li> <li>- <b>Common goal or recognized interdependence</b></li> <li>- Adaptable to interests of other organizations</li> </ul>	<ul style="list-style-type: none"> <li>- Divergent goals</li> <li>- Focus on local organization over cross-agency (e.g., regional) concerns</li> <li>- Lack of goal clarity</li> <li>- Not adaptable to interests of other organizations</li> </ul>
Structure	<ul style="list-style-type: none"> <li>- Formalized coordination committee or liaison roles</li> <li>- Sufficient authority of participants</li> </ul>	<ul style="list-style-type: none"> <li>- Impeding rules or policies</li> <li>- Inadequate authority of participants</li> <li>- Inadequate resources</li> <li>- Lack of accountability</li> <li>- Lack of formal roles or procedures for managing collaboration</li> </ul>
Lateral mechanisms	<ul style="list-style-type: none"> <li>- <b>Social capital</b> (i.e., interpersonal networks)</li> <li>- <b>Effective communication and information exchange</b></li> <li>- Technical interoperability</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Lack of familiarity with other organizations</b></li> <li>- <b>Inadequate communication and information sharing</b> (distrust)</li> </ul>
Incentives	<ul style="list-style-type: none"> <li>- <b>Collaboration as a prerequisite for funding or resources</b></li> <li>- <b>Leadership support and commitment</b></li> <li>- Absence of competitive rivalries</li> <li>- Acknowledged benefits of collaboration (e.g., shared resources)</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Competition for resources</b></li> <li>- <b>Territoriality</b></li> <li>- Organization-level distrust</li> <li>- Lack of mutual respect</li> <li>- Apathy</li> </ul>
People	<ul style="list-style-type: none"> <li>- Appreciation of others' perspectives</li> <li>- Competencies for collaboration</li> <li>- Trust</li> <li>- Commitment and motivation</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Lack of competency</b></li> <li>- Arrogance, hostility, animosity</li> </ul>

Note: Items in bold were identified by at least 25% of the study participants.

(Hocevar, Thomas & Jansen, 2006, November)

The respondents' input, combined with the literature reviews, allowed us to "triangulate" on the important dimensions required for a conceptual model of collaborative capacity. The model used an open systems framework and identified enablers and barriers to collaboration (Hocevar, Thomas & Jansen, 2006). Appendix A presents a short description and visual of our conceptual model.

Our design of the model was an interactive and iterative process, so that important constructs that emerged in Step 3 of Figure 1 served to redirect inquiries in Steps 1 and 2. According to discussions with homeland security professionals and a review of the literature, an instrument to measure collaborative capacity would provide a valuable diagnostic and action-planning tool for their agencies. At the end of the project, the research team also sought to examine the concept of interagency collaborative capacity in contexts beyond homeland security.

As we moved forward to Phase 2 of the project with the knowledge gained in homeland security, we also wanted to extend our understanding of the development and sustainment of collaborative capacity into the more mature context of DoD Acquisition. Taking advantage of support from the NPS Acquisition Research program, we expanded our research team to include an expert in this very complex domain and returned to the scholarly and applied literature to investigate how the dimensions of collaborative capacity might play out in this new context. We discovered a number of new lessons in the acquisition community. For example, research, measurement, and organizational development are all more likely to occur in the contexts of “organizational sets” or networks. In addition, collaboration is generally not an option in acquisition, as it currently appears to be in the homeland security context.

### C. Phase 2: Operationalization

Phase 2 (see Figure 1) of the research began with the theoretical model (Step 3 above), which served as the basis for writing interview and survey questions to diagnose the collaborative capacity of organizations (Step 4). Again, the scholarly literature has indicated that the task of measuring collaborative capacity remains a major obstacle for theory development and refinement. A valid set of measures also would provide agencies with the opportunity to diagnose their collaborative strengths and weaknesses and establish baseline data. In order to progress from Step 3 to Step 4 of Figure 1, the researchers were required to translate the general theoretical model into more specific interview questions and interview schedules and survey items and surveys. In 2006, we developed an initial database of more than 200

interview questions and survey items. The database now contains items for each of the five major domains of the collaborative capacity open systems model: strategy and purpose, structure, people, lateral mechanisms, and incentives.

After developing the database, we made an assessment—using SMEs—of which items were most important and should be included in a survey. This assessment resulted in two surveys: one for homeland security and another for DoD acquisition contexts. Some items in the database are unique to each community, but most are common to both contexts. Appendix B presents a survey that is ready to administer in the HLS context, and Appendix C presents a core survey that is ready for the DoD Acquisition context. Both surveys will be discussed in more detail later in this report.

These surveys, once administered, provide the empirical foundation for validation of the items (See Step 5 above) and, by inference, the theoretical model. Of course, as Figure 1 shows, the empirical results of validation also provide feedback that suggest changes to the model forcing the researchers to modify the theory and return to the literature and consultations with SMEs. Our research has thus brought us to the point of having an operationalization that we believe holds promise for both practice and theory.

## II. Current Study

During this past year, in the context of acquisitions, we have focused most of our time and effort on Steps 2 and 4 of the research process. We have been working with subject-matter experts to validate, revise and refine our measures. This also has required us to work in particular organizational contexts (e.g., DCMA) to make sure that operationalizations are appropriate for the context of DoD Acquisitions.

In this section, the researchers illustrate how collaborative capacity manifests itself in defense acquisition. Then, we share the results of two studies, using our instrumentation, that were conducted in the homeland security context.

### A. Collaborative Capacity in Defense Acquisition

Acquisition Reform initiatives have consistently called for more and better collaboration among participating acquisition agencies, as well as between the DoD and defense contractors. For example, the *DoD Directive 5000.1* (DoD, 2003, The Defense Acquisition System, para. E1.2, Collaboration) specifically states that “acquisition, capability needs, and financial communities, and operational users shall maintain continuous and effective communications with each other” (DoD, 2003, p. 4). In addition, this directive also states that “teaming among warfighters, users, developers, acquirers, technologists, testers, budgeters, and sustainers shall begin during the capability needs definition phase of the acquisition lifecycle” (DoD, 2003, p. 4). Furthermore, the recent *Defense Acquisition Performance Assessment (DAPA)* report recommends improved collaboration among acquisition organizations as well as between the DoD and industry (Department of Defense, 2006). The use of Integrated Product Teams (IPTs), partnering relationships, and alpha contracting processes are but a few examples of innovative arrangements that are currently being used in some DoD departments and agencies. As the *DAPA* recommendations are implemented, additional collaboration requirements and opportunities will emerge.

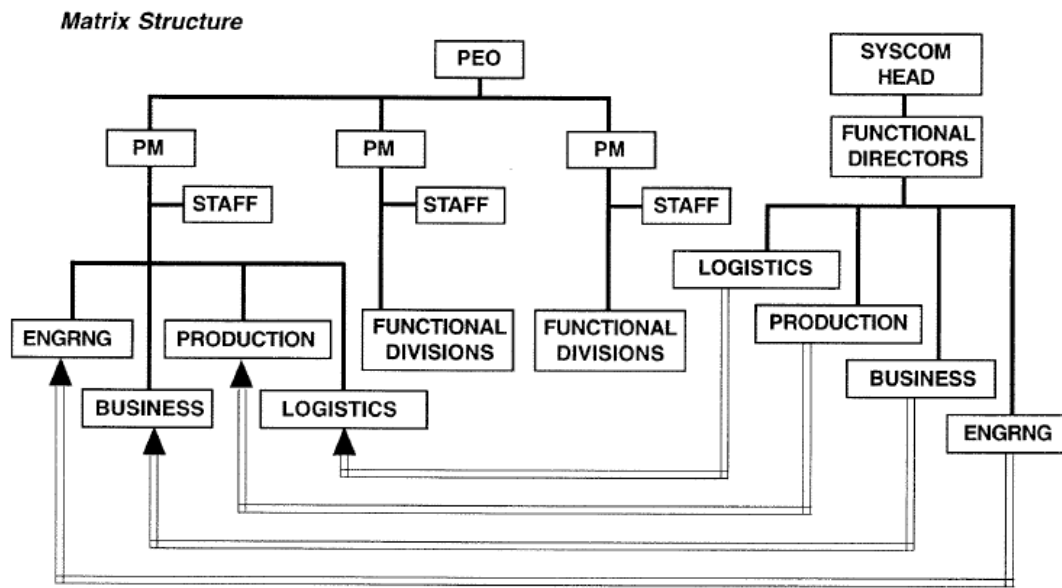
Within the acquisition environment, the opportunities for interagency collaboration are the greatest among the three primary players in defense acquisition—the DoD program office, the prime contractor, and the contract administration organization. Each of these organizations will now be discussed.

### **1. DoD Program Office**

Defense acquisition programs are managed using the project management office concept that is predominant in many contemporary project-oriented organizations. The project management office, as defined by the Project Management Institute (PMI), is an “organizational body or entity assigned various responsibilities related to centralized and coordinated management of those projects under its domain” (PMI, 2004, p. 369). This project management concept is implemented in DoD acquisition through the use of the matrix organizational structure as well as the integrated product team (IPT) structure.

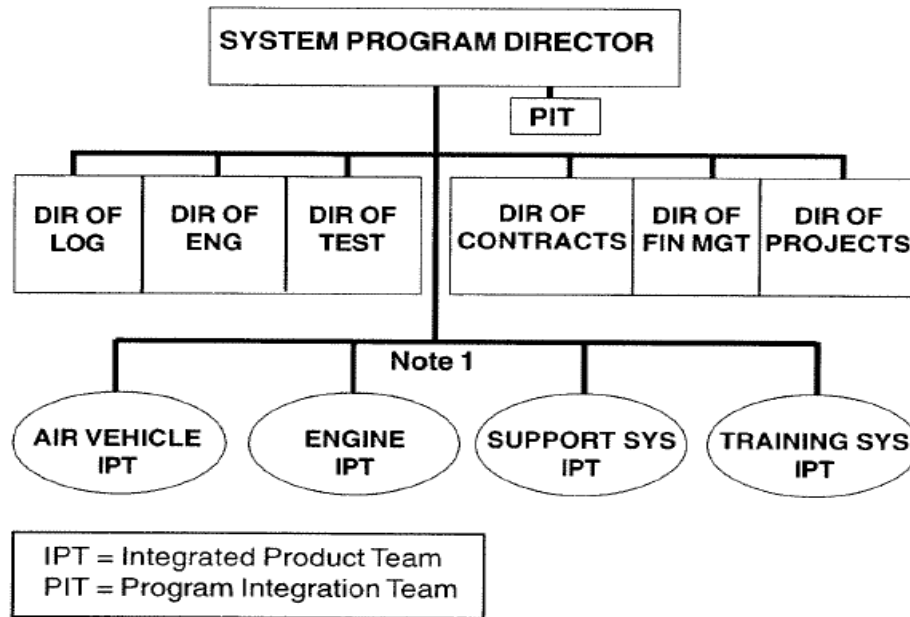
The matrix structure, as illustrated in Figure 2, reflects the key players at this level of the organization. The Program Executive Officer (PEO) is responsible for a group or portfolio of like programs, each managed by a Program Manager (PM). Examples of PEOs include the Army’s PEO for Tactical Missiles, the Navy’s PEO for Ships, and the Air Force’s PEO for Space. The PEO portfolio includes the various programs and their Program Managers. For example, the Air Force’s PEO for Space manages the portfolio of programs such as the Space-based Infrared Systems (SBIRS) program, the Evolved Expendable Launch Vehicle (EELV) program, and the Global Positioning System (GPS) program.





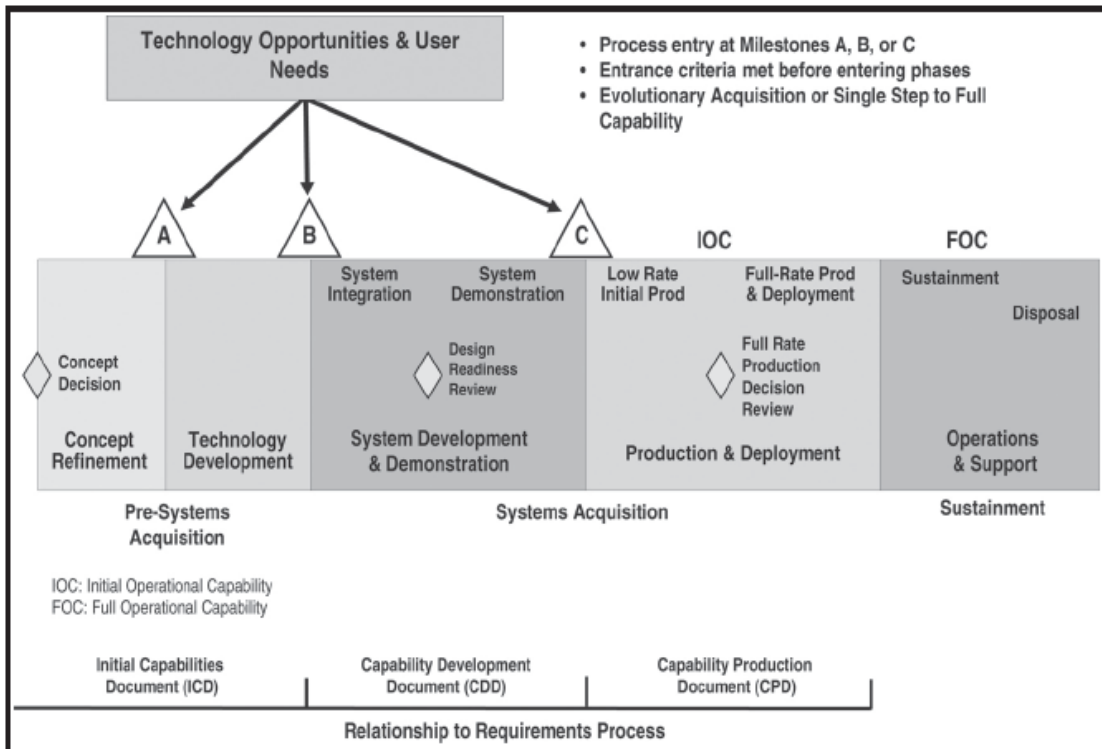
### Figure 2. Program Office Organization Structure

At the program level, the Program Manager is the designated individual with responsibility for and authority to accomplish program objectives for development, production, and sustainment to meet the user's operational requirements (DoD, 2003). The Program Manager's organization includes representatives from the various functional areas that are providing support to the program. These functional areas include financial management, logistics, systems engineering, test and evaluation, production, contracting, and other disciplines. These functional representatives are matrixed into the program management office. Thus, the functional representatives are "on loan" from the functional home office of the parent organization. Typically, these functional representatives make up the various project teams and are organized into Integrated Product Teams (IPTs). The IPTs represent the application of the project team concept to defense acquisition management. The IPTs are basically cross-functional project teams that are dedicated to working specific areas of the project or specific components of the weapon system, as reflected in Figure 3.



**Figure 3. Integrated Product Teams**

The role of the DoD Program Office is to perform the program management functions for the acquisition of the weapon system. The program management activities include planning, organizing, staffing, controlling, and leading the combined efforts of the acquisition personnel and organizations. The management of specific defense acquisition programs follows the development, production, deployment, operations, support, and disposal phases of the weapon system lifecycle as reflected in Figure 4 (DAU, 2005, p. 18). The functional areas involved in program activities include disciplines such as developmental engineering, systems engineering, test and evaluation, production and manufacturing, logistics, financial management, and contract management.



**Figure 4. Weapon Systems Lifecycle**

Given the matrix organizational structure consisting of Integrated Product Teams (IPTs), intra-agency collaboration is a critical need among the various functional disciplines because they represent their functional home offices and respective policies, requirements, and regulations for performing their acquisition activities. However, an even more critical need for collaboration exists at the interagency level—in this case, between the DoD Program Office and the prime contractor. The next section will present the defense prime contractor as the second key player in defense acquisition.

## **2. Prime Contractor**

Although the DoD Program Office manages the acquisition program management activities, the actual work of developing, producing, and deploying the weapon systems is performed by the defense contractors. Defense contractors may be involved in the operations, support, and disposal of the weapon system, as well. The term “prime contractor” is used to refer to the company that has received a

contract from the buying organization, in this case the DoD. The term “prime” is used to reflect the privity of contract relationship between the DoD and the contractor. For example, if the DoD awards a contract to Lockheed Martin for the development of a space satellite, Lockheed Martin is the prime contractor. If Lockheed Martin, in performing its contractual effort with the DoD, awards a contract to Northrop Grumman for the development of the sensors for the space satellite, then Northrop Grumman would be considered a subcontractor to the DoD. In this case, the DoD only has a prime relationship, or privity of contract, with Lockheed Martin.

The prime contractor is responsible for performing the work required in the contract Statement of Work and for meeting the contract terms and conditions.

The DoD Program Office, through the IPTs, is responsible for managing the contractor’s performance. It should be noted that the Statement of Guiding Principles in the *Federal Acquisition Regulation (FAR)* states that the acquisition team consists of “all participants in Government acquisition including not only representatives of the technical, supply, and procurement communities, but also the customers they serve and the contractors who provide the products and services” (*FAR*, 2007, 1.102). Thus, the prime contractor is also considered a member of the IPT.

The organization of the prime contractor’s office typically parallels the organization of the DoD project office, with each DoD project team member having a counterpart in the contractor’s organization. Thus, there will be a contractor program manager leading the contractor program office. The contractor program office will have contractor personnel performing acquisition activities such as developmental engineering, systems engineering, test and evaluation, production and manufacturing, logistics, financial management, and contract management.

As previously stated, the prime contractor performs the work, and the DoD program office team monitors and measures the contractor’s performance. The DoD program office’s responsibility for monitoring and measuring the contractor’s

performance can be quite challenging, especially given both the geographical separation of the program office from the prime contractor's facility, as well as the expertise required for the specific acquisition (e.g., aircraft manufacturing, shipbuilding, space satellite development). To help facilitate and support the monitoring and measuring of the contractor's performance, the DoD maintains contract administration offices (CAOs) within or in close proximity to the contractor's plant and facilities. Thus, the contract administration office is the third key player in defense acquisition. The CAO will be discussed next.

### **3. Contract Administration Office**

The DoD's contract administration expertise lies in the Defense Contract Management Agency (DMCA). The DCMA is a Department of Defense combat support agency ensuring the integrity of the contractual process and providing a broad range of acquisition management services for America's warriors. The DCMA provides customer-focused acquisition support and contract management services to ensure warfighter readiness 24/7 worldwide. During the pre-award activities, the DCMA provides pre-contractual advice to customers to help them construct sound solicitations, identify potential performance risks, select capable contractors, and write contracts that can be effectively administered. During contract administration, the DCMA assesses the contractors' business and technical systems to ensure their products, costs, and schedules comply with the terms and conditions of their contracts. The DCMA monitors contractor performance through data tracking and analysis, on-site surveillance, and tailored support to the program managers (DCMA, 2007a). The DCMA is aligned by product divisions consisting of Aeronautical products, Space and Missile products, Ground Systems and Munitions products, Naval Sea Systems products, Special Programs, and International (DCMA, 2007b).

The DCMA's contract administration activities include those listed in *FAR* 42.3 (Contract Administration Office Functions). Depending on the type of contract, whether developmental, production, or service-related, the DCMA typically uses quality assurance evaluators (QAE), quality assurance representatives (QAR), or contracting officer technical representatives (COTR) to perform the technical aspects

of monitoring the contractor's performance. These technical representatives act as the Program Office's eyes and ears in terms of ensuring the contractor meets the technical requirements of the contract. It is these technical representatives that will determine if the contractor is deficient in performing the contractual requirements, is meeting the required standards, or is exceeding the contractual requirements.

In the DCMA, a designated contracting officer may be assigned specifically to administer a specific contract. These contracting officers are referred to as administrative contracting officers (ACO) and have specifically delegated contract administration functions, as identified in the *Federal Acquisition Regulation* Part 42.

A major emphasis of DCMA activities involves measuring contractor performance. The contractor's performance is measured to ensure that the actual work completed meets the cost, schedule, and performance standards that have been agreed to in the contract. One of the key tools used in contract administration is earned-value management. Earned-value management is an integrated management approach to measuring a project's cost, schedule, and performance progress. This approach is based on comparing actual cost, schedule and performance results with planned estimates. In earned-value management, performance is measured by determining the budgeted cost of work performed and comparing it to the actual costs of the work performed. Thus, the project's progress is measured by comparing the earned value to the planned value (PMBOK, 2004).

#### **4. Need for Collaboration**

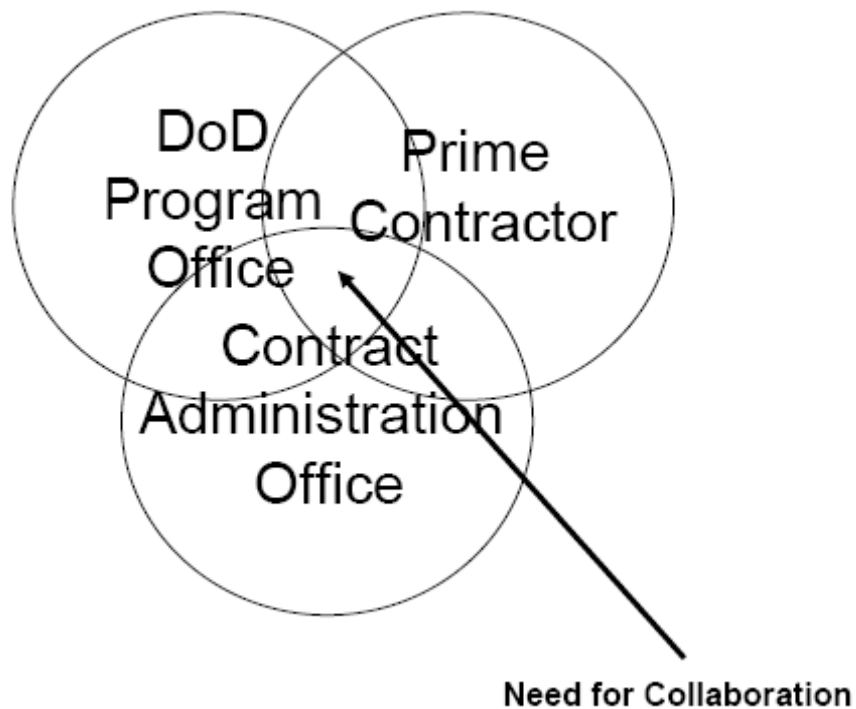
As discussed previously, each of the three key players have critical and defined roles and responsibilities in the defense acquisition environment. The program office represents the end-user's requirement and manages the acquisition process, to include managing the contractor's performance. The prime contractor is responsible for performing the contracted effort and for meeting the contractual requirements in terms of cost, schedule, and performance objectives. Finally, the contract administration office acts as the eyes and ears of the program office at the

contractor's plant, monitoring and evaluating the contractor's performance. These roles and responsibilities are illustrated in Figure 5.



**Figure 5. Interagency Collaboration for Acquisition Management**

These critical roles and responsibilities result in a significant need for collaboration among the key players. The use of complex evolutionary acquisition strategies (including incremental and spiral development approaches) only increases the importance of collaboration among the three acquisition players. The need for such cooperation is illustrated in Figure 6.



**Figure 6. The Necessity of Collaboration**

## **5. Summary**

The DoD acquisition directives and assessment reports continually push for collaboration among the various players in the defense acquisition environment. Nowhere is this need for collaboration more critical than among the key players of acquisition—the program office, the prime contractor, and the contract administration office. The roles and responsibilities of these organizations discussed previously clearly reflect the need for collaboration in performing their respective acquisition activities. Further research should also be conducted regarding potential collaboration among the other critical, yet minor players in acquisition—such as the subcontractors supporting the prime contract programs and their related contract administration organizations, as well as the Defense Finance and Accounting Service (DFAS) and the Defense Contract Audit Agency (DCAA).



## B. Validation of Survey Questions

### 1. Collaborative Capacity Item Database

As previously indicated, the task of assessing the collaborative capacity of an organization or set of organizations and using those assessments for purposes of organizational development is itself a complex, collaborative project. The research process requires the establishment of two types of databases. The first database, which is Step 4 of Figure 1, is the focus of this section. It contains the assessment items, including interview questions and survey responses. The second database, which is Step 5 of Figure 1, comprises the qualitative interview and quantitative survey results gathered from individuals in homeland security and DoD acquisition organizations. The individual-level data informs the psychometric validation (e.g., discriminant and convergent validity) of the items, and the aggregated data of individuals in organizations or organization networks/sets contributes to the development and testing of the theoretical model.

### 2. Survey Items

Because survey questions can be standardized into scales and administered across multiple sites, they are especially useful for comparative purposes. They also demonstrate the power of quantitative data, which allows researchers to establish how much “true variance” or “error variance, or—in other words—how much signal versus noise is in the responses of people. Surveys are not, however, the best means of assessing deeper issues, such as culture, which drives the types of assumptions individuals make about the nature of the collaborative processes within and between organizations, or the complex dynamics that operate to subvert change or transform organizations (Schein, 1999). Survey questions also can be used in survey-guided development to catalyze discussions about these deeper issues and to stimulate planning sessions to generate change. The items and surveys described in this report are designed with such organizational development in mind. Thus, we have worked with subject-matter experts not only to determine if the items “make sense,” but also to ascertain which items are the most important in revealing factors that facilitate or serve as barriers to collaborative capacity. The

items in the Appendices represent our current best judgments regarding which items are likely to be most promising in assessing the state of collaborative capacity and contributing to discussions and OD action plans that will increase collaborative capacity.

**a. The Demographic Items**

The surveys include demographic items to describe the respondents and their own position in the interagency context. Individual items are identified in the surveys in a special section called *Context & Demographics*. The instruction set indicates that, “Demographic data are critical to our analysis. Every precaution will be taken to assure anonymity.” These items are generally placed at the end of the survey, where students can decide—*after* they have taken the survey—if they are comfortable in revealing information (e.g., age or tenure in the organization) that could be used to identify them.

Some demographic items refer to organizational attributes, such as: “My organization is formally mandated to collaborate with other agencies,” and “To what extent does accomplishing your organization's mission require working with other organizations?” Some items refer to attributes of the person responding to the survey, such as: “How many years have you worked for your organization?” and “How many interagency teams are you on?” One issue that came up especially strongly for the acquisition DoD context is the difficulty—given the complex network characteristics of the matrix structures in which people work—of getting respondents to be clear about the meaning of “My organization” in the questionnaire. Thus, we decided to ask one potentially identifying question up front, to help them contextualize their own position in the organization. This question asks, “Which best describes your Acquisition Function or Career Field?” This is followed by alternatives such as: (a) functional office, (c) Contracting, and (h) program management.

The question that asks if the organizations are mandated to collaborate reveals the importance of context and demographics. Whereas there were

numerous cases in which HLS professionals were not formally mandated to collaborate with other organizations, everyone we met in the DoD acquisition context described formal jobs that existed for the sole purpose of collaboration. Thus, many questions written for the discretionary context of much of Homeland Security collaboration simply didn't make sense in the Acquisition context. The highly legal, formal, and institutionalized context of Acquisition made collaboration a *raison d'être* for our subjects. Thus, when SMEs from the Acquisition community identified the most useful and important survey items in the HLS context, we found that some questions were inappropriate or hard to interpret. For instance, being asked how much time one spends collaborating is odd when one is a project manager whose basic mission is to develop and sustain collaboration. We also discovered that the institutionalized structure of collaboration in DoD Acquisition (which is briefly described elsewhere in this report) was often matrixed and characterized by a network of relationships. This contrasted with the homeland security context in which individuals were clearly in a chain of command under an organization that might or might not collaborate with other individuals in their clearly different organizations. Homeland security SMEs were able to easily respond to survey questions categorized under *My Organization*. But some Acquisition SMEs could have a conversation of 30 minutes or more discussing their matrixed organization and their roles in it prior to going through the set of the survey. During a second meeting, they might have to remind themselves of the perspective they had taken in the first meeting. It was even the case that collaboration at one stage of the acquisition process was improper (i.e., collusion). The end result was that some items were deleted from the acquisition survey as inappropriate, and this resulted in a slightly shortened survey.

#### **b. The Collaborative Capacity Attitudinal Items**

The items that were written for both the acquisition and homeland defense surveys were designed to assess dimensions of the open systems model created in previous stages of this research. Thus, survey questions were created to assess aspects of: (a) Purpose and Strategy, (b) Structure, (c) Lateral Mechanisms, (d) Incentives and Reward Systems, and (e) People and People Practices. The

psychometric validation will reveal dimensions of responses within these domains, which may potentially lead to a more clearly specified model that is more useful for organizational development efforts.

In general, two or more items are written to assess specific dimensions. In the general category of *Strategy and Purpose*, several dimensions might emerge. For example, strategic commitment might be assessed by the following two items: (a) “Interagency collaboration (IA) is a high priority for my organization,” and (b) “My organization recognizes the importance of working with other agencies to achieve its mission.” The importance of strategic leadership is assessed by: (a) I often hear my organization’s top leadership discuss the importance of collaboration with other organizations,” and (b) “My organization’s leaders meet and confer with the leaders of other agencies about mutual collaboration.”

Our work with SMEs has suggested that assessments of *Structure* often are difficult to conduct directly and are often manifested through other aspects of the model. SMEs have emphasized the importance of flexibility within the highly institutionalized context of acquisition. Two survey inquiries that are designed to assess this are: (a) “My org is flexible in adapting its procedures to better fit with those organizations with which we work or might work”; (b) “My org is responsive to the requirements of other organizations with which we work.” Another item assesses role conflict: “When working on IA issues, I face incompatible requirements or requests.” (Roles are central to structure; one might even argue that structure is largely a structure of roles.)

*Lateral Relations* are assessed by statements such as: (a) “Our employees know who to contact in our partner agencies for information or decisions,” and (b) “In this org, people take the initiative to build relationships with their counterparts in other organizations.” At the heart of theoretical presentations of lateral relations (e.g., Galbraith, 2001) is the idea of information-sharing that serves to manage uncertainty and increase effectiveness. Several survey inquiries that investigate this idea include: (a) “My org works with other agencies to identify lessons learned for

improved collaboration,” and (b) “My org provides other agencies adequate access to information we have that is relevant to their work.” Obviously, collaborative capacity in interorganizational settings is largely a matter of building lateral relations, so more items are presented in this domain than in the structural domain.

Our research continues to emphasize the importance of *Incentives and Reward Systems*, both in the organization as a whole and for individuals within the organization. The former shows up as strategy and purpose, as organizations’ strategic leadership must decide whether to invest resources to pursue opportunities in the environment (e.g., grants, policy-driven initiatives). However, items in this section of the survey tend to focus on individual-related incentives. Examples of these questions are: (a) “Engaging in IA activities at work is important to career advancement in this organization,” and (b) “My organization rewards employees for investing time and energy in building collaborative relationships.” Because the performance-appraisal process is part of the reward system, there also is some focus on this, such as: “My organization has established clear performance standards regarding interagency work.” The basic message of a reward-systems perspective is that it is foolish to expect people to put effort and talent into improving collaboration if there are no positive consequences to reinforce those efforts (Kerr, 1975).

Collaborative capacity is a multi-level construct. It can be assessed at the individual as well as at the organizational levels, and it is hard to imagine how it will succeed at the organizational level if people lack commitment and collaborative skills. Therefore, a number of questions have been written to examine *people* and their individual collaborative capacity. These include: (a) “Our employees have the collaborative skills (e.g., conflict mgt, team process) needed to work effectively with other agencies”; (b) “People in my organization understand the benefits of collaborating with other organizations”; and (c) “Members of my organization respect the expertise of those in other organizations with whom we work.” Responses might reveal that individuals are committed to collaboration as a worthwhile activity, but lack the training and skills required to execute collaboratively. This would lead to a

very different action plan than if people had the skills but saw no positive consequences for making extra efforts to develop collaborative relationships and knowledge.

We do not want to neglect the importance of collaborative climate or culture. The model does not include culture, because culture is embedded throughout the model. Culture is fundamentally the deeply rooted assumptions people have about their organization's purposes, structure, relationships with others, means of getting ahead or failing to get ahead, and ways of behaving. Thus, the following inquiry on lateral mechanisms also reveals something about culture: "My org has strong norms that encourage sharing information with other agencies." Because culture also reflects values, the following reward systems item also clearly reveals an aspect of culture: "My organization rewards members for their IA collaborative activities." Indeed, one can make an argument that the incentives and reward systems of an organization, especially when those include recognition of individuals by leaders, is perhaps the main driver of culture. Many items in the survey, including "People in my organization tend to be suspicious and distrustful of their counterparts in other organizations," are related to critical aspects of culture.

### **c. Summary**

Perhaps the most important messages that have come out of the validations to date are the positive assessments of the subject-matter experts. We have not yet received the critical validations required in Step 5 of our model. However, the SMEs we are working with have expressed enthusiasm for the survey. Perhaps the most positive comment was by an Acquisition SME, who said that simply taking the survey probably would have caused him to change his behavior and be more effective at collaboration. He imagined how people in his former command might have responded and what he might do, as a leader, to improve their perceptions and behavior.

Working with SMEs, we have a prototype of a survey to assess collaborative capacity in the context of the DoD acquisition community and have contacted

commands and thesis students (themselves often SMEs) to begin data collection. We believe we have a set of items that are faithful to our inductively derived model, and we have a diagnostic strategy for delivering this survey that will facilitate future validation and help commanders develop collaborative capacity at their respective commands. We are, thus, well-positioned to develop the second database that will contain responses across several organizations.

### C. Validation and Two Empirical Studies in the Homeland Security Context

In the case of the Homeland Security survey, the authors, along with two subject-matter experts (SMEs) from the Homeland Security Community, spent several hours writing, rewriting, selecting and rejecting questions from the master database. The SMEs went through all the survey items and independently chose those items that seemed most appropriate to assess key success factors and barriers in their own organizations. At the end of this lengthy procedure, they created and administered a survey in their respective agencies. These two studies are explained in more detail in the next sections.

After careful analysis of the database, the authors identified the individual questions or statements that received strong support as well as those that had limited support. Those items with strongest support were earmarked for inclusion in the survey, while those items with weak support were earmarked for rework or eventual deletion.<sup>2</sup> Items with moderate levels of support were revisited and often rewritten. Some highly ranked items were eliminated because that dimension already had other highly ranked items. These decisions were meant to avoid unnecessary duplication. In general, items were included when 3 out of 5 experts agreed on their likely importance.

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<sup>2</sup> In fact, few items are deleted completely as there is no cost to relegating them to an “outtakes” file. The items might be revisited with different contexts or organizations.

Furthermore, the two SMEs—who created their own unique surveys for administration in their own contexts—including a few questions that seemed appropriate for their agencies but did not make it into the authors’ final survey for Homeland Security.

In this discussion, we include a survey in Appendix B that will be used with practitioners in NPS’s Homeland Security Master’s program, plus two surveys created by our SME-Master’s degree candidates (Appendices D and E). Appendix F includes citations for any items that were drawn from existing surveys. Additional SMEs gave us feedback on the surveys, although this primarily resulted in our increased confidence in the instrument rather than any substantive changes. At this stage, we are quite confident these instruments are ready for administration and psychometric validation.<sup>3</sup>

### **1. Study 1—Collaborative capacity of infrastructure system (early stages)**

The first empirical study was conducted by Draper (2007) and focused on a set of organizations that exemplified the early developmental stages of interagency collaboration. Draper chose cross-sector collaboration among critical infrastructure utilities (water, gas, and electric) in the City of Mesa, Arizona, because collaboration was underdeveloped, yet seen as highly critical to national security. Draper noted that subsequent to 9/11, numerous studies showed that the infrastructure sectors were not prepared to respond to local and regional disasters. He cited the 2004

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<sup>3</sup> The term validation is somewhat confusing at this stage of the research. Validation, in terms of SMEs, is primarily content validation. The result of the process is increased confidence that the items make sense to SMEs; in other words, they are not confusing, assess a single idea and seem to be investigating the core ideas we feel are crucial. This is, of course, empirical validation, in that the SMEs are providing input based on their experience. In the next phase of the research, we will be able to create our second database, one that contains an item-by-subject data matrix. This phase of empirical validation uses more advanced psychometric techniques, such as factor analysis. These techniques will allow means and variances for individual items to be computed and covariances among items to be specified. This further classification will allow for judgments of “discriminant validity” and “convergent validity” of the items with respect to the dimensions (i.e., the latent variables) underlying the items. For example, we will be able to determine if items written to assess “structural flexibility” validly converge with each other while also be discriminated from items assessing “incentives to collaborate.”



findings of an Interdependencies Tabletop Exercise in New Orleans, Louisiana, that confirmed the lack of cross-agency relationships:

The infrastructures for the most part focused on their own organizational interests, with minimal cross-sectoral coordination or formalized relationships. Organizations seriously overestimated their capabilities to protect against threats and attacks and respond and recover expeditiously. Overall, the lack of clarity on roles and responsibilities, coupled with the lack of coordination and communication together pose serious obstacles to effective response and recovery from disruptions. (Gulf Coast, 2004, pp. 3-5)

Using the Hocevar, Thomas, and Jansen (2006) model of collaborative capacity, Draper carefully chose questions from the authors' database to examine Mesa's cross-sector infrastructure collaboration (Thomas, Hocevar & Jansen, 2006). His study addressed the following research questions.

1. What factors are inhibiting the agencies from collaboration?
2. What factors are present that would enable these agencies to collaborate?
3. What might be done to build their capacity to collaborate?

To capture the different levels of responsibility in the various agencies, ten members from senior management and thirteen mid-level managers completed the selected subset of items. Appendix D shows the subset of questions that included 35 questions—4 questions from Purpose and Strategy, 4 questions from Structure, 11 questions from Social Capital, 10 questions from People Processes, and 1 Demographic question. Also included in the Appendix are the data from the combined senior and mid-level managers showing strengths and weaknesses among the various elements of the model. For instance, Draper found that the managers recognized the importance of working together to achieve outcomes, but they did not believe the organization had strong norms that encouraged collaboration. Draper also found that senior and mid-level managers had different views about the various aspects of collaboration. The results of Draper's study will allow managers in the City of Mesa to use the data as a basis for discussing the

enablers and barriers to collaboration and then to determine the best way to improve collaboration among the infrastructure agencies within the city.

## **2. Study 2—Collaborative capacity in a HLS system of networks (mid-stage)**

The second study was conducted by Holbrook (2007) and represents a mid-stage developmental collaboration. Holbrook examined a regional network of emergency preparedness task forces in the Sacramento Metropolitan region of California. The task forces included the Operational Area Counsel (OAC), the Tactical Commanders Network (TCN), and the Consortium of Technical Responders (CTR). Holbrook's study documented the development of the network and assessed its current collaborative capacity. Holbrook selected 54 questions from Hocevar, Jansen, and Thomas's collaborative capacity survey along the five dimensions: Strategy and Purpose, Structure, Lateral Mechanisms, Incentives and Motivation, People and People Processes. All members of the three regional task forces were asked to complete the survey for both their home organization and for the task force in which they participated. Participants included 12 from the OAC, 22 from the TCN, and 33 from the CTR—including representatives from 24 local agencies, 3 state agencies, and 5 federal agencies.

The purpose of this study was to present an aggregate description of the network, identify strengths and weaknesses, propose suggestions for improving the collaborative capacity in this network, and provide a model for other agencies that were in the early stages of developing collaborative capacity. This research allowed Holbrook to examine trends across and between each of the survey dimensions for the participants' home agencies, as well as each task force.

Results of Holbrook's study showed that the home organizations displayed a moderate level of collaborative capacity. Strengths included: (a) considerations of the interests and goals of other agencies in the region, (b) strong information-sharing, and (c) a history of successful collaboration fostering respect for others and supported by agency leadership. Weaknesses included: (a) a lack of measurement

criteria in place to identify organizational-level benefits of collaboration, (b) a lack of training in place to develop collaborative skills, and (c) the addition of collaborative activities on top of regular workload. Appendix E displays the overall ratings of the home organizations across collaborative dimensions.

Collaborative capacity within each of task forces was considered strong. The strongest features across dimensions for all regional collaborative networks were information-sharing, adaptability, a history of collaboration, felt need, shared vision, interagency capability awareness, conflict management, and an increased trust in and respect for interagency partners. The weakest aspect was specific training for developing collaborative skills (e.g., conflict management and team-process skills).

### **3. Summary**

This technical report documents the initial validation of our collaborative capacity survey. In this report is a description of our research program on inter-agency collaboration, including the identification of the key dimensions and construct of the collaborative capacity model and the steps taken to operationalize and validate the model. Second, this report explains how collaborative capacity relates to DoD Acquisition. Third, we offer a detailed description of the process used to refine our collaborative capacity survey instrument. Last, we review two empirical studies, based on the authors' model, that were conducted in an effort to refine the collaborative capacity diagnostic survey. At this point, the authors are confident that they have a valid instrument that can be used to collect data around the five subdimensions. Next steps include the administration of the instrument to as many participants as possible and a statistical analysis of the factors that seem to matter most when it comes to building collaborative capacity.

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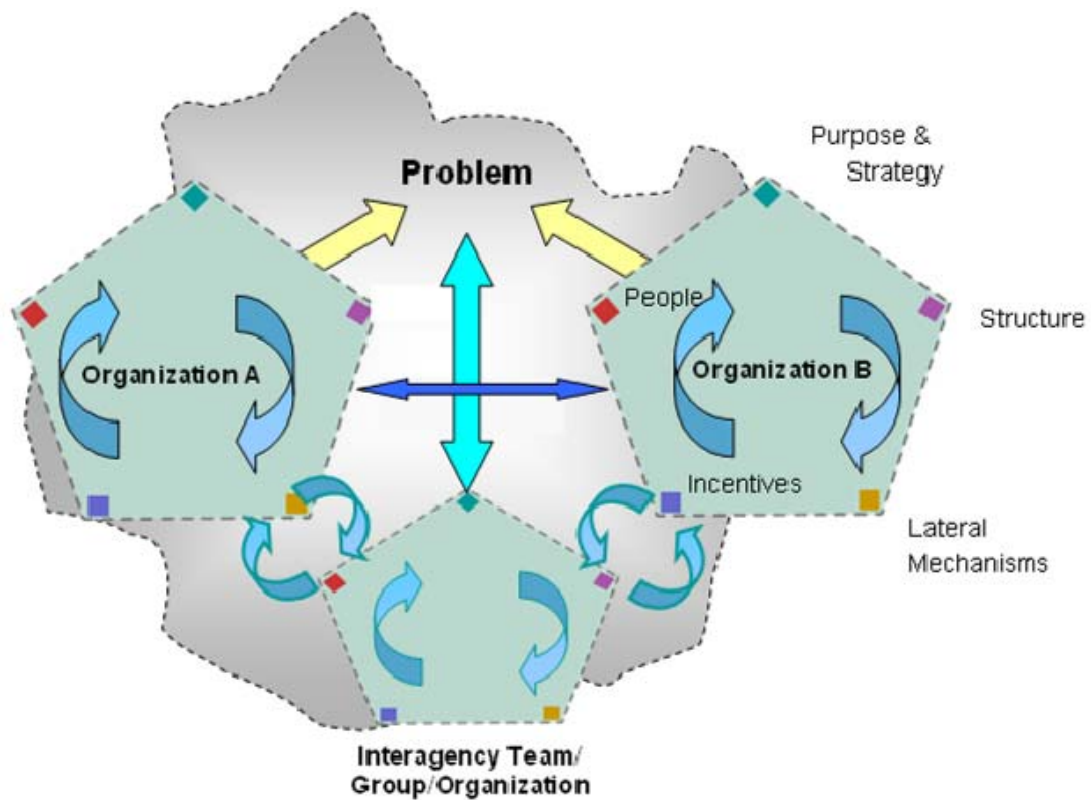
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## Appendix A. Homeland Security Conceptual Model

Drawing on relevant literature and other experts in the field, we deductively developed a framework to map the conditions for effective interagency collaboration. Figure 7 illustrates our model: two organizations (A and B) face a problem in which they have some interdependent interest or responsibility. Each organization is represented in terms of the five organizational design components derived from Galbraith (2002). The arrows indicate the dynamic interaction among the system elements both within and between organizations as they meet interagency goals.

The dynamic interactions occur in at least three domains. First, effective collaborative capacity requires that the five system-design categories (Strategy, Structure, Incentives, Lateral Mechanisms and People) for each participating organization be aligned with each other and with the environmental requirement or challenge (cited in Nadler & Tushman, 1980). The interaction reflected in the arrows within each of the three pentagons. However, because the challenge assumes interdependence among multiple organizations, collaborative capacity cannot be developed by those focusing solely on the dynamics within each organization. Alignment also needs to occur among the system elements *across* organizations. Finally, interagency structures are often established—either temporarily or permanently—to better enable the collaborative response to the common problem. In such a case, a third domain of interaction needs to be developed so that the design characteristics of the interagency task force or team are not only internally consistent, but also are aligned with the primary organizations they represent (Hocevar, Thomas & Jansen, 2006).



**Figure 7. Developing Organization Design Dynamics to Improve Collaborative Capacity**

(Hocevar, Jansen, & Thomas, 2006)



## Appendix B. Survey for Homeland Security



### INTERAGENCY COLLABORATION SURVEY

**DIRECTIONS:** This survey is designed to assess your organization's collaborative capacity. Please answer the following questions to the best of your ability. All responses will be aggregated for statistical analysis by NPS researchers. The survey is confidential and voluntary.

- 1 The survey will ask you several questions about your "organization." You can use your unit or division as a reference point OR you can refer to your organization as a whole. The unit or division must be involved in collaborations with other organizations. Please indicate which reference you will use for this survey.

- ☐ Unit or division within a large organization
- ☐ Organization as a whole
- ☐ Neither - there is no interorganizational collaboration in a unit or division that I have knowledge about. (If this is your choice, you will skip most questions in our survey.)

Please indicate the degree to which you agree or disagree with the following statements. If you would like to go back and change your responses, use your browser's back button.

If this item doesn't seem to apply or you "don't know", you can skip the item.

- 2 Interagency collaboration (IA) is a high priority for my organization.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 3 We have clearly established goals for IA collaboration.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 4 My organization has committed adequate time, budget and personnel to interagency collaboration.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 5 My organization can quickly form or modify partnerships as requirements change.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 6 Our top leaders often discuss the importance of collaboration with others in the organization.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 7 My organization's unique requirements make IA collaboration difficult.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 8 Our organization is willing to address cross-agency goals.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 9 My organization is willing to invest resources to accomplish cross-agency goals.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 10 My organization recognizes the importance of working with other agencies to achieve its mission.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 11 My organization is flexible in adapting its procedures to better fit with those organizations with which we work or might work.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 12 Conflicting organizational policies make collaboration difficult.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 13 Institutional efforts to develop our collaborative know-how and skills receive a high priority for funding in my organization.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 14 My organization invests significant time and energy to deconflict existing policies and processes that impede collaboration.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 15 My organization has identified measurement criteria to evaluate interagency collaboration efforts.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 16 My organization has assigned adequate personnel to the work required for effective interorganizational collaboration.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 17 A history of competition and conflict affects our IA capability.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 18 In my organization, collaborative activities and responsibilities are added on top of our regular work load.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 19 Engaging in IA activities at work is important to career advancement in this organization.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 20 My organization rewards employees for investing time and energy in building collaborative relationships.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 21 My organization gives full credit for time spent on IA work.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 22 My organization saves on costs of technology and equipment by collaborating with other agencies.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 23 My organization is participating in IA collaboration as part of requirements for funding.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 24 My organization has established clear performance standards regarding interagency work.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 25 My organization has strong norms that encourage sharing information with other agencies.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 26 My organization has strong norms for learning from others.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 27 My organization invests time and resources to become familiar with the capabilities and requirements of the organizations with which we work or might work.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 28 Our employees know who to contact in our partner agencies for information or decisions.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 29 In this organization, people take the initiative to build relationships with their counterparts in other organizations.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 30 My organization commits adequate human and financial resources to training with other agencies.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 31 My organization provides other agencies adequate access to information we have that is relevant to their work.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 32 My organization invests time and resources to become familiar with how partner organizations make decisions.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 33 We have adequate access to needed information from other agencies.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 34 My organization works with other agencies to identify lessons learned for improved collaboration.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 35 My organization has the technical interoperability to enable effective IA collaboration.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 36 Our employees have the collaborative skills (e.g., conflict management, team process skills) needed to work effectively with other agencies.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 37 Members of my organization are aware of the capabilities of other organizations with which we have to work.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 38 Members of my organization respect the expertise of those in other organizations with whom we work.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 39 Members of my organization understand how our work relates to the work of other organizations with whom we collaborate or might collaborate.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 40 People in my organization tend to be suspicious and distrustful of their counterparts in other organizations.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 41 Members of my organization are able to take another group's perspective on a problem or course of action.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 42 Members of my organization are willing to engage in a shared decision making process with other organizations when addressing IA issues.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 43 People in my organization understand the benefits of collaborating with other organizations.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 44 I have a clear understanding of my responsibilities relating to IA collaboration.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 45 My organization's leaders meet and confer with the leaders of other agencies about mutual collaboration.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 46 People in my organization seek input from other organizations.

Never					Always
1	2	3	4	5	6

- 47 People in my organization share information with other organizations.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 48 My organization considers the interests of other agencies in its planning.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 49 My organization rewards members for their IA collaborative activities.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 50 Collaborative talents and achievements are considered when people are reviewed for promotion.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6



The following questions ask how often you engage in a behavior. Please respond to the following questions on a scale of "Never" to "Always"

- 51 People in my organization are honest and direct with their counterparts in other organizations.

Never			Always		
1	2	3	4	5	6

- 52 My organization is responsive to the requirements of other organizations with which we work.

Never			Always		
1	2	3	4	5	6

- 53 When working on IA issues, I face incompatible requirements or requests.

Never			Always		
1	2	3	4	5	6

Questions 54-56 ask about an Inter-Agency Team. If you answer "no," please skip questions 54 and 55 and continue the survey.

- 54 My organization has a representative on an Inter-Agency Team (IA)

YES	NO
-----	----

- 55 My organization gives members of the IA team adequate authority to speak on behalf of the organization.

Strongly Disagree			Strongly Agree		
1	2	3	4	5	6

- 56 My organization supports the decisions and recommendations of the IA team.

Strongly Disagree			Strongly Agree		
1	2	3	4	5	6

## Demographics

Demographic data are critical to our analysis. Every precaution will be taken to assure anonymity.

- 57 My organization is formally mandated to collaborate with other agencies.

- ☐ Yes  
☐ No  
☐ I Don't Know

- 58 To what extent does accomplishing your organization's mission require working with other organizations?

Not at all	Seldom	Occasionally	Frequently	All the time
1	2	3	4	5

- 59 How high is the risk if interagency coordination is not effective?

Very Low Risk	Low Risk	Moderate Risk	High Risk	Very High Risk	
1	2	3	4	5	6

- 60 To what extent is there consensus across participating agencies as to the purpose and value of collaboration?

Strong Disagreement	Limited Disagreement	Limited Agreement	Strong Agreement
1	2	3	4

- 61 To what extent is the most typical problem or benefit motivating interagency collaboration time critical?

Within hours	Within days	Within a few months	Within a year
<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4

- 62 How would you rate the overall success of your organization in collaborating with other organizations?

Very Poor	Poor	Somewhat Poor	Somewhat Good	Good	Very Good
<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6

- 63 My organization's involvement in inter-agency collaboration is motivated by the opportunity for outside funding.

Strongly Disagree					Strongly Agree
<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6

- 64 How often does your organization participate in formal inter-agency meetings?

Daily	Weekly	Monthly	Quarterly	Semi-Annually	Annually
<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6

- 65 How many people are employed by the unit OR organization you have been thinking about in answering our questions.

- 66 Our organization has a history of working well with other agencies.

Strongly Disagree					Strongly Agree
<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6

- 67 How long has your organization been involved in IA collaborations?

- ☐ Not currently involved in an IA collaboration
- ☐ Less than 6 months
- ☐ 6 months to 1 year
- ☐ 1 to 2 years
- ☐ 2 to 3 years
- ☐ 3 to 5 years
- ☐ More than 5 years

- 68 What percentage of your work week is spent doing IA work?

69 How many years have you worked for your organization?

70 How many IA teams are you currently on?

- ☐ 0
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6 or more

The following questions will be used to describe our sample. All responses will be aggregated to preserve anonymity.

71 What is your age?

72 For what agency do you work?

73 In what state do you reside?

74 For what level of government do you work?

- ☐ Federal
- ☐ State
- ☐ County
- ☐ Municipal
- ☐ I don't work for government.

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## Appendix C. Department of Defense Acquisition Collaborative Capacity Survey

This survey focuses on how well organizations collaborate with each other to accomplish their joint missions. We are interested in why some organizations seem so capable of entering into excellent working relationships while others struggle and fail.

The survey has been designed with the acquisition communities of the Department of Defense in mind. We hope it will stimulate your thinking about the factors that promote or inhibit collaboration.

Feedback on group results will be shared in a future class. Individual responses will not be revealed. The responses will be aggregated for statistical analysis so that the survey remains confidential. It is also voluntary.

There are 63 items on the survey. It should take you less than 30 minutes. We thank you for your time. We genuinely appreciate your efforts to help us learn more about collaborative capacity in DoD.

---

This survey is designed to assess your organization's capacity to collaborate with other organizations. You should select an organization you work in (or previously worked in) that collaborates with other organizations. It is important to keep the same organization in mind as you go through the questions.

---

1 Is your organization a Program Management Office or a Functional Office?

- ☐ A Program Management Office
- ☐ A Functional Office
- ☐ Other, please specify (e.g., DCMA, DFAS, SEI)

**2** Which best describes your Acquisition Function or Career Field?

- ☐ Auditing
- ☐ Business, Cost Estimating & Financial Management
- ☐ Contracting
- ☐ Facilities Engineering
- ☐ Industrial/Contract Property Management
- ☐ Information Technology
- ☐ Life Cycle Logistics
- ☐ Production, Quality, & Manufacturing
- ☐ Program Management
- ☐ Purchasing
- ☐ Systems Planning, Research, Development & Engineering
- ☐ Test & Evaluation.
- ☐ Other, please specify

When an item asks about interorganizational collaboration, we are referring to the relationship between your organization and another organization outside of your enterprise. For example, if you work (or worked) for an acquisition center (e.g., TACOM or CECOM) either within the program office or functional office, the "other organizations" with which you work could be DCMA or prime contractor or other DoD agency (e.g., DFAS, DCMA, DCAA, SEI).

**3** Interorganizational collaboration is a high priority for this organization.

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	

- 4** We have clearly established goals for interorganizational collaboration.

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	

- 5** My organization has committed adequate time, budget and personnel to interorganizational collaboration.

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	

- 6** My organization can quickly form or modify partnerships as requirements change

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	

- 7** The leaders of my organization emphasize the importance of collaboration.

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	

- 8** My organization strives to meet the DoD guidance on collaboration.

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	

- 9** My organization is willing to address interorganizational goals

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	

- 10** My organization is willing to invest resources to accomplish interorganizational goals

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 11** My organization recognizes the importance of working with other agencies to achieve its mission

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 12** My organization is flexible in adapting its processes and procedures to better fit with other organizations involved in the acquisition process.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 13** Conflicting organizational policies make collaboration difficult.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 14** Institutionally sponsored efforts to develop our collaborative know-how and skills receive a high priority for funding in my organization

Strongly Disagree					Strongly Agree
1	2	3	4	5	6



- 15** My organization has identified measurement criteria or performance metrics to evaluate interorganization collaboration efforts

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 16** My organization has assigned adequate personnel to the work required for effective interorganizational collaboration

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 17** A history of interorganizational conflict affects our interorganizational capability

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 18** Engaging in interorganizational activities at work is important to career advancement in this organization.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 19** My organization rewards employees for investing time and energy in building collaborative relationships

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 20** My organization's interorganizational collaborations are supported by collaborative planning tools and technologies

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 21** My organization has established clear performance standards regarding interorganizational work

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 22** My organization has strong norms that encourage sharing information with other organizations

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 23** My organization invests time and resources to become familiar with the capabilities and requirements of the organizations with which we work or might work.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 24** Our employees know who to contact in other agencies for information or decisions

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 25** Members of my organization take the initiative to build relationships with their counterparts in other organizations

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 26** My organization commits adequate human and financial resources to training with other organizations

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	

- 27** My organization provides other agencies adequate access to information we have that is relevant to their work

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	

- 28** My organization has strong norms for learning from other organizations

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	

- 29** My organization has adequate access to needed information from other organizations

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	

- 30** My organization works with other organizations to identify lessons learned for improved collaboration

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	

- 31** My organization has the technical interoperability (e.g., information systems, accounting systems) to enable effective interorganizational collaboration

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 32** Our employees have the collaborative skills (e.g., conflict management, team process skills) needed to work effectively with other agencies

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 33** Members of my organization are aware of the capabilities of other organizations with which we work

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 34** Members of my organization respect the expertise of those in other organizations with whom we work

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 35** Members of my organization understand how our work relates to the work of other organizations with which we collaborate or might collaborate

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 36** Members of my organization tend to be suspicious and distrustful of their counterparts in other organizations

Strongly Disagree					Strongly Agree

**41** Members of my organization seek input from other organizations

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

**42** Members of my organization share information with other organizations

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

**43** My organization considers the interests of other throughout the acquisition process

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

**44** My organization rewards members for their interorganizational collaborative activities

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

**45** Collaborative talents and achievements are considered when people are reviewed for promotion

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

- 46 Members of my organization are honest and direct with their counterparts in other organizations

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	

The following questions ask how often you engage in a behavior. Please respond to the following questions on a scale of "Almost Never" to "Almost always"

- 47 My organization is responsive to the requirements of other organizations with which we work

Almost Never						Almost Always
1	2	3	4	5	6	

- 48 I face incompatible requirements or requests when working with other organizations

Almost Never						Almost Always
1	2	3	4	5	6	

- 49 How many interorganizational special project or tiger teams are you on?

- ☐ Zero
- ☐ One
- ☐ Two
- ☐ Three
- ☐ Four
- ☐ Five
- ☐ Six or More

- 50 My organization gives members of interorganizational special project teams (or tiger team) adequate authority to speak on behalf of the organization

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	

- 51 My organization supports the decisions and recommendations of the special project or tiger team

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

**CONTEXT AND DEMOGRAPHICS:** Demographic data are critical to our analysis. Every precaution will be taken to assure anonymity.

- 52 How high is the risk if interorganization coordination is not effective?

Very low risk	Low risk	Moderate risk	High risk	Very high risk
1	2	3	4	5

- 53 To what extent is there consensus across participating organizations as to the purpose and value of collaboration?

- ☐ Strong Disagreement
- ☐ Limited Disagreement
- ☐ Limited Agreement
- ☐ Strong Agreement

- 54 To what extent is the most typical problem or benefit motivating interorganizational collaboration time critical?

- ☐ time critical within hours
- ☐ within days
- ☐ within a couple of months
- ☐ within a year
- ☐ longer than a year

**55** How would you rate the overall success of your organization in collaborating with other organizations?

- ☐ very poor
- ☐ poor
- ☐ somewhat poor
- ☐ somewhat good
- ☐ good
- ☐ very good

**56** How often does your organization participate in formal interorganization meetings?

- ☐ daily
- ☐ weekly
- ☐ monthly
- ☐ quarterly
- ☐ about every six months
- ☐ annually

**57** How many people are employed by your organization?

**58** My organization has a history of working well with other agencies.

Strongly  
Disagree

1

2

3

4

5

Strongly  
Agree

6

**59** How long has your organization been involved in Interorganization collaborations?

- ☐ not currently involved in an IA collaboration
- ☐ less than 6 months
- ☐ 6 months to 1 year
- ☐ 1 to 2 years
- ☐ 2 to 3 years
- ☐ 3 to 5 years
- ☐ more than five years



**60** What is the geographic proximity of these participating organizations?

- ☐ less than 10 miles
- ☐ 11 to 100 miles
- ☐ 101 to 500 miles
- ☐ 501 to 3500 miles
- ☐ more than 3500 miles.

**61** How many years have you worked for your organization?

**62** What is your age?

**63** In what state do you reside?

**SUBMIT** 

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## Appendix D. Collaborative Capacity Survey for Infrastructure

### SENIOR AND MIDDLE MANAGERS (N=23)

Question			
	Disagree	Agree	Mean
1. Our organizational leaders often meet and confer with the leaders of other agencies about cross-sector collaboration.	<b>61%</b>	<b>39%</b>	<b>2.3</b>
2. Cross-sector (e.g., water, electric, and gas) collaboration is a high priority for my organization.	<b>74%</b>	<b>26%</b>	<b>2.2</b>
3. Because of my organization's unique requirements, I find it difficult to engage in cross-sector collaboration.	<b>61%</b>	<b>39%</b>	<b>2.3</b>
4. My organization recognizes the importance of working with other sectors to achieve an outcome.	<b>22%</b>	<b>78%</b>	<b>2.9</b>
5. My organization is willing to adapt procedures to meet the requirements of outside organizations with which we might work.	<b>52%</b>	<b>48%</b>	<b>2.5</b>
6. Conflicting organizational policies make collaboration very difficult for my organization.	<b>43%</b>	<b>57%</b>	<b>2.6</b>
7. My organization lacks formal roles that support effective cross-sector collaboration.	<b>26%</b>	<b>74%</b>	<b>2.9</b>
8. Effective cross-divisional collaboration occurs within my organization.	<b>57%</b>	<b>43%</b>	<b>2.4</b>
9. My organization has strong norms that encourage cross-sector collaboration.	<b>78%</b>	<b>22%</b>	<b>2.1</b>
10. My organization has strong norms for learning from others.	<b>70%</b>	<b>30%</b>	<b>2.2</b>
11. My organization invests time and resources to become familiar with the capabilities and requirements of the organizations with which we might work.	<b>74%</b>	<b>26%</b>	<b>2.0</b>
12. My organization is responsive to the requirements of other organizations with which we work.	<b>35%</b>	<b>65%</b>	<b>2.6</b>
13. My organizational processes are too rigid and don't enable me to work effectively with other organizations.	<b>74%</b>	<b>26%</b>	<b>2.2</b>
14. My organization provides adequate access by other sectors to information we have that is relevant to their work.	<b>39%</b>	<b>61%</b>	<b>2.5</b>
15. My leadership commits their time and our resources to combined training with other sectors.	<b>74%</b>	<b>26%</b>	<b>2.0</b>
16. Employees who work with other sectors know whom to contact in those agencies for information or decisions.	<b>26%</b>	<b>74%</b>	<b>2.7</b>

17. My organization works with other sectors or agencies to identify lessons learned for improved collaboration.	<b>70%</b>	<b>30%</b>	<b>2.2</b>
18. In my organization, people take the initiative to build relationships with other organizations.	<b>49%</b>	<b>51%</b>	<b>2.5</b>
19. My organization has the technical interoperability to enable effective cross-sector collaboration.	<b>17%</b>	<b>83%</b>	<b>3.2</b>
20. My organization captures lessons learned to increase our collaboration skills.	<b>57%</b>	<b>43%</b>	<b>2.4</b>
21. A history of competition and conflict affects our cross-sector capability.	<b>22%</b>	<b>78%</b>	<b>3.0</b>
22. My organization has a history of working well with other sectors.	<b>49%</b>	<b>51%</b>	<b>2.6</b>
23. We gain savings in training costs by collaborating with other agencies.	<b>35%</b>	<b>65%</b>	<b>2.8</b>
24. Potential collaborative partners often view my organization as competitors.	<b>61%</b>	<b>39%</b>	<b>2.4</b>
25. I have adequate time to invest in the requirements for collaboration.	<b>61%</b>	<b>39%</b>	<b>2.3</b>
26. My organization has a history of cross-sector competition.	<b>43%</b>	<b>57%</b>	<b>2.6</b>
27. People in my organization have no energy for collaborating with those in other organizations.	<b>70%</b>	<b>30%</b>	<b>2.3</b>
28. People in my organization recognize the importance of working with other sectors to achieve an outcome.	<b>9%</b>	<b>91%</b>	<b>3.0</b>
29. Members of my organization are aware of the capabilities of other organizations with which we work.	<b>35%</b>	<b>65%</b>	<b>2.7</b>
30. People in my organization have a positive attitude toward collaboration with other organizations.	<b>52%</b>	<b>48%</b>	<b>2.4</b>
31. Members of my organization are willing to share decision-making authority with other organizations when addressing cross-sector issues.	<b>57%</b>	<b>43%</b>	<b>2.3</b>
32. Members of my organization respect the expertise of those in other organizations with whom we have to work.	<b>17%</b>	<b>83%</b>	<b>2.8</b>
33. When working on cross-sector issues, I often face incompatible requirements or requests.	<b>52%</b>	<b>48%</b>	<b>2.5</b>
34. Employees from my organization are not used to working with people from other organizations and find it hard to do so.	<b>57%</b>	<b>43%</b>	<b>2.4</b>
35. People in my organization tend to be suspicious and distrustful of counterparts in other organizations.	<b>57%</b>	<b>43%</b>	<b>2.4</b>

## Appendix E. Collaborative Capacity Diagnostic Survey for Homeland Security Collaborative Networks

### Overall Ratings of Home Organizations across Collaboration Dimensions

<b>Strategy &amp; Purpose</b>	<b>Overall N=47</b>
My home organization considers the interests of other agencies in our planning.*	3.2 (0.5)
My home organization is willing to address cross-agency goals.*	3.4 (0.6)
Interagency collaboration is a high priority for my home organization.*	3.3 (0.7)
My home organization is willing to invest resources to accomplish cross-agency goals.*	3.1 (0.7)
My home organization is able to balance our individual organizational goals with cross-agency (regional) requirements.**	3.0 (0.7)
<b>Structure</b>	
My home organization is willing to adapt procedures to meet the requirements of other organizations with which we do interagency work.*	3.1 (0.6)
My home organization invests significant time and energy to de-conflict existing policies and processes that impede collaboration.*	2.9 (0.7)
My home organization has developed an understanding of our interagency roles and responsibilities.*	3.0 (0.6)
My home organization has measurement criteria in place that evaluate the organizational-level benefits of collaboration.*	2.3 (0.7)
<b>Lateral Mechanisms</b>	
My home organization supports the decisions and recommendations of the interagency team. *	3.0 (0.6)
My home organization commits adequate human and financial resources to training with our interagency partners.*	2.7 (0.8)
My home organization gives members of the interagency team adequate authority to speak on behalf of the organization.*	3.0 (0.6)
My home organization has strong norms that encourage sharing information with other agencies.*	3.1 (0.6)
My home organization invests time and resources to become familiar with the capabilities and requirements of our partner organizations.*	2.7 (0.6)
My home organization is flexible in adapting our procedures to better fit with those of partner organizations.*	2.8 (0.6)
My home organization provides other agencies adequate access to information we have that is relevant to their work.*	3.2 (0.6)

My home organization works with other agencies to identify lessons learned for improved collaboration. *	3.0 (0.6)
My home organization makes necessary investments in the infrastructure for collaboration.*	2.7 (0.7)
People in my home organization actively engage in exchanges with counterparts in other organizations.*	3.3 (0.6)
My home organization has the technical interoperability to enable effective interagency collaboration.*	3.1 (0.7)
<b>Incentives—Motivation and Leadership</b>	
A history of competition and conflict affects my home organization's interagency capability.*	2.3 (0.7)
My home organization has experienced successful interagency collaboration in the past.*	3.3 (0.5)
In my home organization, collaborative activities and responsibilities are added on top of our regular workload.*	3.2 (0.6)
To what extent does leadership support collaboration in your home organization?**	3.2 (0.9)
My home organization saves on costs of technology and equipment by collaborating with other agencies.*	2.7 (0.9)
A significant motivation for my home organization's involvement in interagency collaboration is the opportunity for outside funding.*	2.7 (0.8)
<b>People and People Processes</b>	
Members of my home organization are aware of the capabilities of other organizations with which we work.*	2.9 (0.6)
People in my home organization are unwilling to share information with others.*	1.9 (0.6)
Members in my home organization are willing to share decision-making authority with other organizations when addressing interagency issues.*	2.9 (0.6)
Members in my home organization respect the expertise of those in other organizations with whom we have to work.*	3.3 (0.4)
My home organization manages conflict well.*	2.7 (0.7)
My home organization has training in place to develop collaborative skills (e.g., conflict management, team process skills). *	2.3 (0.7)
People in my home organization tend to be suspicious and distrustful of our counterparts in other organizations. *	2.2 (0.6)

\* 4-point scale; 1—Strongly Disagree to 4—Strongly Agree

\*\* 4-point scale; 1—Rarely to 4—Almost Always

## Appendix F. Sources for Selected Items

HLS Item No.	Acq Itm No.	Survey Item	Source
not included	8	My organization strives to meet the DoD guidance on collaboration.	GAO-06-15. (2005).
28	24	Our employees know who to contact in other agencies for information or decisions.	Hanson, M. T. & Noria, N. (2004).
31	27	My organization provides other agencies adequate access to information we have that is relevant to their work.	Hanson, M. T. & Noria, N. (2004).
33	29	My organization has adequate access to needed information from other organizations.	Hanson, M. T. & Noria, N. (2004).
34	30	My organization works with other organizations to identify lessons learned for improved collaboration.	Hanson, M. T. & Noria, N. (2004).
46	41	Members of my organization seek input from other organizations.	Hanson, M. T. & Noria, N. (2004).
47	42	Members of my organization share information with other organizations.	Hanson, M. T. & Noria, N. (2004).
53	48	I face incompatible requirements or requests when working with other organizations.	Rizzo, J. R., House, R. J., & Lirtzman, S. J. (1970).
55	50	My organization gives members of interorganizational special project team (or tiger team) adequate authority to speak on behalf of the org.	GAO-06-15. (2005).
56	51	My organization supports the decisions and recommendations of the special project or tiger team.	GAO-06-15. (2005).

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- Software Requirements for OA
- Managing Services Supply Chain
- Acquiring Combat Capability via Public-Private Partnerships (PPPs)
- Knowledge Value Added (KVA) + Real Options (RO) Applied to Shipyard Planning Processes
- Portfolio Optimization via KVA + RO
- MOSA Contracting Implications
- Strategy for Defense Acquisition Research
- Spiral Development
- BCA: Contractor vs. Organic Growth

### **Contract Management**

- USAF IT Commodity Council
- Contractors in 21st Century Combat Zone
- Joint Contingency Contracting
- Navy Contract Writing Guide
- Commodity Sourcing Strategies
- Past Performance in Source Selection
- USMC Contingency Contracting
- Transforming DoD Contract Closeout
- Model for Optimizing Contingency Contracting Planning and Execution

### **Financial Management**

- PPPs and Government Financing
- Energy Saving Contracts/DoD Mobile Assets
- Capital Budgeting for DoD
- Financing DoD Budget via PPPs
- ROI of Information Warfare Systems
- Acquisitions via leasing: MPS case
- Special Termination Liability in MDAPs

## **Human Resources**

- Learning Management Systems
- Tuition Assistance
- Retention
- Indefinite Reenlistment
- Individual Augmentation

## **Logistics Management**

- R-TOC Aegis Microwave Power Tubes
- Privatization-NOSL/NAWCI
- Army LOG MOD
- PBL (4)
- Contractors Supporting Military Operations
- RFID (4)
- Strategic Sourcing
- ASDS Product Support Analysis
- Analysis of LAV Depot Maintenance
- Diffusion/Variability on Vendor Performance Evaluation
- Optimizing CIWS Lifecycle Support (LCS)

## **Program Management**

- Building Collaborative Capacity
- Knowledge, Responsibilities and Decision Rights in MDAPs
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